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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/922,252 | 08/03/2001 | Jen-Shou Tseng | JCLA7248 | 7618 |

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EXAMINER

VILLECCO, JOHN M

ART UNIT PAPER NUMBER

2622

DATE MAILED: 10/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/922,252

Applicant(s)

TSENG ET AL.

Examiner

John M. Villecco

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,7,8 and 11-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7,8 and 11-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Regarding previously pending, independent claims 1, 4, and 7, applicant has amended the claims to change the phrase "light sensing device" to "light sensitive charge storage device".

With regard to claims 4 and 7; applicant contends that when taking into consideration the claims and the specification, the camera and the camera body cannot be interpreted to be a light sensitive charge storage device. The examiner disagrees. As mentioned in the previous advisory action, MPEP § 2111, claims are to be given their broadest reasonable interpretation consistent with the specification. The examiner maintains that the electronic camera itself can be interpreted to be a light sensitive charge storage device, since an electronic camera in and of itself is a light sensitive charge storage device. For this reasons the rejection of claims 4 and 7 will be maintained.

2. Applicant's arguments, with respect to the amendment of claim 1 have been fully considered and are persuasive. Claim 1 contains details of the structure of the optical scanner and how the vibration sensor is mounted within that structure, which Hayakawa does not adequately disclose. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground of rejection is made in view of Umeda et al. (U.S. Patent No. 6,452,632).

3. Additionally, after a closer review of the specification, a 112 rejection has been presented for claims 1, 2, and 11-14. Please see the 112 rejection on the following pages.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 2, and 11-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Regarding independent claims 1 and 12, applicant claims that the controller measures the magnitude of vibration of the light sensitive charge storage device. However, it is clear from the specification that the controller merely converts the measured value of vibration into an electrical signal. On page 5, lines 10-14 and page 6, lines 1-3 of the specification, applicant discloses that the vibration sensor (212) detects a magnitude of vibration of the light-sensing device, while the controller is used to produce an actuation signal. Thus, nowhere in the specification is it disclosed that the controller actually measures the magnitude of vibration of light sensitive charge storage device, as claimed. For examination purposes it will be assumed that applicant means that the controller uses the signal from the vibration sensor to produce an actuator signal.

7. Claims 2, 11, 13, and 14 are rejected based on their dependency to claims 1 and 12, respectively.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. **Claims 4, 5, 7, and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Hayakawa et al. (U.S. Patent No. 6,130,993).**

10. Regarding *claim 4*, Hayakawa discloses camera having an image stabilizer for reducing the effects of camera shake during a photographing operation. More specifically, Hayakawa discloses a light sensing device (CCD, 16), an optical system (mirror, 14), a vibration sensor (vibration sensor, 38) for detecting a magnitude of vibration of the light sensing device (col. 10, lines 36-38), a controller (CPU, 40) connected to the vibration sensor for measuring he magnitude of vibration of the light sensing device and producing a corresponding actuator signal, and an actuator (second stepper motor, 25) connected to the CPU (40) and the optical system (mirror, 14) for moving the mirror (14) such that effects due to vibration are minimized. See column 8, line 20 to column 10, line 67 and Figures 1 and 4. Although Hayakawa fails to specifically disclose how the vibration sensor is mounted on the light sensing device, it is inherently mounted somewhere on the body of the light sensing device (camera body (10) and film/CCD (16)) since that is the only place where a magnitude of vibration of the light sensing device can be accurately measured. Thus, since the claims to not require the vibration sensor to be mounted directly on the light sensitive charge storage device, Hayakawa meets the claim language because it still measures the magnitude of vibration of the light sensitive charge storage device.

11. As for *claim 5*, as mentioned above in the discussion of claim 4, Hayakawa discloses that the optical system is a mirror (14), where in the actuator (stepper motor, 25) adjusts the mirror

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(14) by rotating it in order to reduce camera shake. See column 12, line 8 to column 13, line 31 and Figure 6.

12. Regarding **claim 7**, Hayakawa discloses camera having an image stabilizer for reducing the effects of camera shake during a photographing operation. More specifically, Hayakawa discloses a light sensing device (CCD, 16), an optical system (mirror, 14), a means for sensing a vibration (vibration sensor, 38) for detecting a magnitude of vibration of the light sensing device (col. 10, lines 36-38), a means for converting the vibration to an actuator signal (CPU, 40), and a means for adjusting (second stepper motor, 25) an optical system (mirror, 14) according to the actuator signal. See column 8, line 20 to column 10, line 67 and Figures 1 and 4. Since the claims do not require the vibration sensor to be mounted directly on the light sensitive charge storage device, Hayakawa meets the claim language because it still measures the magnitude of vibration of the light sensitive charge storage device.

13. As for **claim 8**, Hayakawa discloses that the optical system is a mirror (14), where in the actuator (stepper motor, 25) adjusts the mirror (14) by rotating it in order to reduce camera shake. See column 12, line 8 to column 13, line 31 and Figure 6.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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15. **Claims 1, 2, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayakawa et al. (U.S. Patent No. 6,130,993) in view of Umeda et al. (U.S. Patent No. 6,452,632).**

16. Regarding *claim 1*, Hayakawa discloses camera having an image stabilizer for reducing the effects of camera shake during a photographing operation. More specifically, Hayakawa discloses a light sensing device (CCD, 16), an optical system (mirror, 14), a vibration sensor (vibration sensor, 38) for detecting a magnitude of vibration of the light sensing device (col. 10, lines 36-38), a controller (CPU, 40) connected to the vibration sensor for measuring he magnitude of vibration of the light sensing device and producing a corresponding actuator signal, and an actuator (second stepper motor, 25) connected to the CPU (40) and the optical system (mirror, 14) for moving the mirror (14) such that effects due to vibration are minimized. See column 8, line 20 to column 10, line 67 and Figures 1 and 4.

Hayakawa, however, fails to specifically disclose that the vibration sensor is mounted on the light sensitive charge storage device. Umeda, on the other hand, discloses that it is well known in the art to mount a vibration detection circuit on an image sensing device. More specifically Umeda discloses a digital signal processor (107) mounted on the same substrate as the image sensor (102). The digital signal processor can include a camera shake detection circuit (107s). See Figure 36 and column 18, lines 55-67. This camera shake data is output and inherently used to correct the image signal. By implementing such circuits on the same chip as the image sensor, the number of parts can be reduced and thus, the price can be reduced (col. 2, line 12-15). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the vibration sensor directly onto the light sensitive charge

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storage device of Hayakawa so that the number of parts can be reduced, and thus the price can be reduced.

17. As for *claim 2*, Hayakawa discloses that the optical system is a mirror (14), where in the actuator (stepper motor, 25) adjusts the mirror (14) by rotating it in order to reduce camera shake. See column 12, line 8 to column 13, line 31 and Figure 6.

18. With regard to *claim 11*, Hayakawa discloses that the image pickup device can be a CCD (col. 8, line 22).

19. **Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayakawa et al. (U.S. Patent No. 6,130,993) in view of Umeda et al. (U.S. Patent No. 6,452,632) and further in view of Katsuyama et al. (U.S. Patent No. 5,460,341).**

20. Regarding *claim 12*, Hayakawa discloses camera having an image stabilizer for reducing the effects of camera shake during a photographing operation. More specifically, Hayakawa discloses a light sensing device (CCD, 16), an optical system (mirror, 14), a vibration sensor (vibration sensor, 38) for detecting a magnitude of vibration of the light sensing device (col. 10, lines 36-38), a controller (CPU, 40) connected to the vibration sensor for measuring he magnitude of vibration of the light sensing device and producing a corresponding actuator signal, and an actuator (second stepper motor, 25) connected to the CPU (40) and the optical system (mirror, 14) for moving the mirror (14) such that effects due to vibration are minimized. See column 8, line 20 to column 10, line 67 and Figures 1 and 4.

Hayakawa, however, fails to specifically disclose that the vibration sensor is mounted on the light sensitive charge storage device. Umeda, on the other hand, discloses that it is well

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known in the art to mount a vibration detection circuit on an image sensing device. More specifically Umeda discloses a digital signal processor (107) mounted on the same substrate as the image sensor (102). The digital signal processor can include a camera shake detection circuit (107s). See Figure 36 and column 18, lines 55-67. This camera shake data is output and inherently used to correct the image signal. By implementing such circuits on the same chip as the image sensor, the number of parts can be reduced and thus, the price can be reduced (col. 2, line 12-15). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the vibration sensor directly onto the light sensitive charge storage device of Hayakawa so that the number of parts can be reduced, and thus the price can be reduced.

Additionally, neither Hayakawa nor Umeda specifically discloses that the controller is implemented using proportional-integral-derivative control. Katsuyama, on the other hand, discloses that it is well known in the art to use a PID controller to effect movement in a device to correct for camera shake. More specifically, Katsuyama teaches the use of PID controller (55) to drive a linear actuator (32) to move the sensor (31) to correct for vibrations measured by the disturbance data (90). It is well known in the art that PID controllers provide for simple, cheap, and easy-to-implement control devices. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a PID controller in the camera of Hayakawa to move the mirror to a desired location.

21. As for **claim 13**, Hayakawa discloses that the optical system is a mirror (14), where in the actuator (stepper motor, 25) adjusts the mirror (14) by rotating it in order to reduce camera shake. See column 12, line 8 to column 13, line 31 and Figure 6.

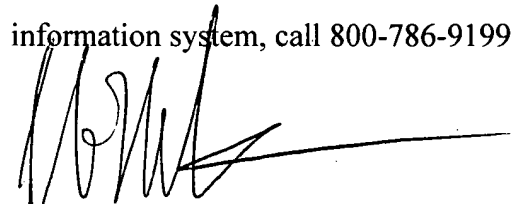
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22. With regard to *claim 14*, Hayakawa discloses that the image pickup device can be a CCD (col. 8, line 22).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. Villecco whose telephone number is (571) 272-7319. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



John M. Villecco
October 20, 2006